

IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF TEXAS  
AUSTIN DIVISION

DYNAMIC 3D GEOSOLUTIONS LLC,

PLAINTIFF,

v.

HALLIBURTON COMPANY;  
HALLIBURTON ENERGY SERVICES, INC;  
LANDMARK EXPLORATION AND  
PRODUCTION SOFTWARE AND  
SERVICE, INC.; AND  
LANDMARK GRAPHICS CORPORATION

DEFENDANTS.

CASE NO.: 1:14-cv-00111

JURY TRIAL DEMANDED

DYNAMIC 3D GEOSOLUTIONS LLC,

PLAINTIFF,

v.

SCHLUMBERGER LIMITED  
(SCHLUMBERGER N.V.);  
SCHLUMBERGER HOLDINGS  
CORPORATION; AND SCHLUMBERGER  
TECHNOLOGY CORPORATION

DEFENDANTS.

CASE NO.: 1:14-cv-00112

JURY TRIAL DEMANDED

DYNAMIC 3D GEOSOLUTIONS LLC,

PLAINTIFF,

v.

EMERSON ELECTRIC CO.,  
EMERSON PROCESS MANAGEMENT  
LLLP, ROXAR, INC. AND  
ROXAR AS,

DEFENDANTS.

CASE NO.: 1:14-cv-00526

JURY TRIAL DEMANDED

DYNAMIC 3D GEOSOLUTIONS LLC,

PLAINTIFF,

v.

LMK RESOURCES, INC. AND  
LMKR HOLDINGS,

DEFENDANTS.

CASE NO.: 1:14-cv-00527

JURY TRIAL DEMANDED

---

DYNAMIC 3D GEOSOLUTIONS LLC,

PLAINTIFF,

v.

PARADIGM, B.V.,  
PARADIGM GEOTECHNOLOGY, B.V.,  
PARADIGM GEOPHYSICAL CORP.,  
PARADIGM LTD. AND  
PARADIGM SERVICES CORP.,

DEFENDANTS.

CASE NO.: 1:14-cv-00528

JURY TRIAL DEMANDED

---

DYNAMIC 3D GEOSOLUTIONS LLC,

PLAINTIFF,

v.

IHS INC. AND  
IHS GLOBAL INC.,

DEFENDANTS.

CASE NO.: 1:14-cv-00529

JURY TRIAL DEMANDED

---

**DEFENDANTS'<sup>1</sup> OPENING CLAIM CONSTRUCTION BRIEF**

---

<sup>1</sup> Dynamic 3D Geosolutions LLC (“Dynamic 3D”) filed six suits against the above-captioned Defendants (collectively, “the Defendants”) alleging infringement of U.S. Patent No. 7,986,319 (the “’319 patent”). The *Markman* briefing schedules for all six cases are consolidated. In the interest of judicial economy and streamlining the issues for the Court, the Defendants jointly submit a single Opening Claim Construction Brief.

## TABLE OF CONTENTS

	Page
<b>INTRODUCTION.....</b>	<b>1</b>
<b>BACKGROUND .....</b>	<b>3</b>
<b>ARGUMENT.....</b>	<b>4</b>
I.    Law of Claim Construction.....	4
II.   Constructions of the Asserted Claims.....	6
A.   “performing well log correlation operations” .....	6
B.   “forming dynamic cross-sections” .....	8
C.   “presenting manipulable three-dimensional geological interpretations of two-dimensional geological data” .....	11
D.   “automatic reprojections of well trajectories into the cross- sections” .....	13
E.   “stratigraphic erosional rules” .....	14
F.   “conformable mapping operations” .....	16
G.   “forming fence diagrams of seismic backdrop cross-sections” .....	18
H.   “seismic opacity filtering” .....	19
<b>CONCLUSION .....</b>	<b>20</b>

**TABLE OF AUTHORITIES****Page(s)****CASES**

<i>01 Communique Lab., Inc. v. LogMeIn, Inc.</i> , 687 F.3d 1292 (Fed. Cir. 2012).....	5
<i>Amdocs (Isr.) Ltd. v. Openet Telecom, Inc.</i> , 761 F.3d 1329 (Fed. Cir. 2014).....	6, 13
<i>Amgen Inc. v. Hoechst Marion Roussel, Inc.</i> , 314 F.3d 1313 (Fed. Cir. 2003).....	8
<i>ArcelorMittal Fr. v. AK Steel Corp.</i> , 700 F.3d 1314 (Fed. Cir. 2012).....	<i>passim</i>
<i>Aristocrat Techs Austl. Pty Ltd. v. Int’l Game Tech.</i> , 709 F.3d 1348 (Fed. Cir. 2013).....	5, 10, 18
<i>Azure Networks, LLC v. CSR PLC</i> , 771 F.3d 1336 (Fed. Cir. 2014).....	1, 4, 7
<i>Cisco Sys., Inc. v. Innovative Wireless Solutions</i> , Nos. 1:13-CV-00492, 1:13-CV-00504, 2015 WL 128138 (W.D. Tex. Jan. 8, 2015) .....	4, 9, 11, 12
<i>GE Lighting Solutions, LLC v. AgiLight, Inc.</i> , 750 F.3d 1304 (Fed. Cir. 2014).....	13
<i>Hill-Rom Servs., Inc. v. Stryker Corp.</i> , 755 F.3d 1367 (Fed. Cir. 2014).....	5
<i>Interval Licensing LLC v. AOL, Inc.</i> , 766 F.3d 1364 (Fed. Cir. 2014).....	12
<i>K-2 Corp. v. Salomon S.A.</i> , 191 F.3d 1356 (Fed. Cir. 1999).....	15
<i>Marine Polymer Techs., Inc. v. HemCon, Inc.</i> , 672 F.3d 1350 (Fed. Cir. 2012).....	9
<i>Nystrom v. TREX Co.</i> , 424 F.3d 1136 (Fed. Cir. 2005).....	18
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005).....	4, 5

<i>Playtex Prods., Inc. v. Procter &amp; Gamble Co.</i> , 400 F.3d 901 (Fed. Cir. 2005).....	5
<i>SanDisk Corp. v. Kingston Tech. Co.</i> , 695 F.3d 1348 (Fed. Cir. 2012).....	15
<i>Sinorgchem Co. v. ITC</i> , 511 F.3d 1132 (Fed. Cir. 2007).....	7
<i>Starhome GmbH v. AT&amp;T Mobility LLC</i> , 743 F.3d 849 (Fed. Cir. 2014).....	17
<i>Tate Access Floors, Inc. v. Interface Architectural Res., Inc.</i> , 279 F.3d 1357 (Fed. Cir. 2002).....	2
<i>Teva Pharm. USA, Inc. v. Sandoz, Inc.</i> , 135 S. Ct. 831 (2015).....	4
<i>TGIP, Inc. v. AT&amp;T Corp.</i> , 512 F. Supp. 2d 696 (E.D. Tex. 2007).....	5, 7
<i>Thorner v. Sony Computer Entm’t Am. LLC</i> , 669 F.3d 1362 (Fed. Cir. 2012).....	1, 5
<i>U.S. Surgical Corp.</i> , 103 F.3d at 1568 .....	10
<i>Unitherm Food Sys., Inc. v. Swift-Eckrich, Inc.</i> , 375 F.3d 1341 (Fed. Cir. 2004).....	1
<i>White v. Dunbar</i> , 119 U.S. 47 (1886).....	2
<i>Woodrow Woods &amp; Marine Exhaust Sys., Inc. v. Deangelo Marine Exhaust, Inc.</i> , 692 F.3d 1272 (Fed. Cir. 2012).....	10, 13

## STATUTES

35 U.S.C. § 101 .....	17
-----------------------	----

## OTHER AUTHORITIES

U.S. Patent & Trademark Office, <i>Message From Administrative Patent Judges Sheridan Snedden And Jacqueline Bonilla: Deep Dive Into A Patent Owner Preliminary Response In An Inter Partes Review Proceeding Before The Patent Trial And Appeal Board</i> , <a href="http://www.uspto.gov/blog/aia/entry/deep_dive_into_a_patent">http://www.uspto.gov/blog/aia/entry/deep_dive_into_a_patent</a> (Feb. 24, 2014) .....	4
---	---

## INTRODUCTION

The '319 patent is directed to methods and systems that execute a series of routine and well-known steps to generate three-dimensional interpretations using two-dimensional geological data points. When the '319 application was filed, there were many prior art software programs that enabled the three-dimensional interpretation of two-dimensional geological data, including software developed and sold by some Defendants. As a result, a number of basic features and functions associated with computerized three-dimensional geological modeling are claimed using terms that are widely used and well-understood by those skilled in the art.

The parties disagree whether there are terms that require judicial construction. Defendants contend that the terms are routine geological terms and should be afforded their readily ascertainable plain meanings—consistent with the “‘heavy presumption’ that claim terms ‘carry their accustomed meaning’” to those of skill in the art. *Azure Networks, LLC v. CSR PLC*, 771 F.3d 1336, 1347 (Fed. Cir. 2014) (citation omitted); *see also Unitherm Food Sys., Inc. v. Swift-Eckrich, Inc.*, 375 F.3d 1341, 1351 (Fed. Cir. 2004) (“[A]doption of a plain meaning construction is ... presumptively correct.”). The intrinsic record uniformly confirms (as does the relevant extrinsic evidence) that the plain meaning applies because the claims and specification use the disputed terms precisely as they are understood in the art. Nowhere in the intrinsic record will the Court find the sort of “clear and unmistakable” disclaimer required in order to depart from the plain meaning. *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1366-68 (Fed. Cir. 2012). The disputed terms also appear in contemporaneous materials developed by the inventors to market and sell their RECON geological software (the patented commercial embodiment)—where the terms likewise are used consistent with their plain meaning. Moreover, in parallel *Inter Partes* Review (“IPR”) proceedings, the Patent Office’s Patent Trial and Appeal Board (“PTAB”) recently instituted three IPRs on the '319 patent and

determined that no construction was necessary for any claim terms.<sup>2</sup> The PTAB is right; the terms should be given their plain and ordinary meaning.

In contrast (and atypically for a plaintiff), Dynamic 3D seeks construction of the maximum number of claim terms permitted.<sup>3</sup> Dynamic 3D's proposals are flawed because they disregard the heavy presumption in favor of plain meaning and seek to limit the claims. For example, Dynamic 3D proposes that the straightforward term "dynamic" be replaced with 36 words laden with extraneous conditions and imported limitations. (Dkt. No. 122-1 at 2.) The idea that the Court must replace the term "dynamic" with a 36-word definition to arrive at its "plain meaning" flouts common sense. Next, Dynamic 3D suggests that the readily understood word "manipulable" be replaced with 17 words mandating that changes to a three-dimensional interpretation be made in "real time" in an "interactive three dimensional environment." (*Id.* at 4.) That, too, makes no sense.

Dynamic 3D's proposed constructions are not helpful to the jury and reflect its litigation-inspired effort to systematically import limitations to distract from the fact that the '319 patent claims, as written, read squarely onto the prior art. But the words of patents are not "like a nose of wax, which may be turned and twisted in any direction," to avoid invalidity defenses. *White v. Dunbar*, 119 U.S. 47, 51 (1886). Courts must "accord [claim language] full breadth even if

---

<sup>2</sup> The PTAB found a reasonable likelihood that the petitioner will establish unpatentability of all 93 claims of the '319 patent in view of the inventors' webpages that mirrored the patent disclosure. The petitioner proposed plain meaning for all claim terms. (Decl. of A. Wahls ("Wahls Decl."), Ex. B, Halliburton IPR Petition, p. 8.) Dynamic 3D failed to dispute claim construction in its response and the PTAB found it unnecessary to construe any claim terms. (Ex. E, PTAB IPR Institution Decision, p. 5.)

<sup>3</sup> The Court permitted the parties to seek construction of up to fifteen claim terms. (Dkt. No. 54, p. 2.) By agreement, Dynamic 3D was permitted to identify eight claim terms and the six co-defendants were permitted to identify seven. (*See* Ex. F, M. Collins Dec. 10, 2014 Email to Defendants.) Defendants initially proposed seven terms that did not require construction, but were invalid under 35 U.S.C. § 112. But, to focus on claim construction rather than invalidity, Defendants withdrew their seven terms from consideration. (Dkt. No. 122.) Defendants reserve the right to address § 112 invalidity at another time.

the result is a claim that is clearly invalid.” *Tate Access Floors, Inc. v. Interface Architectural Res., Inc.*, 279 F.3d 1357, 1372 (Fed. Cir. 2002).

Defendants respectfully request that the Court adopt the plain meaning of the terms, as used throughout the intrinsic record, and reject Dynamic 3D’s limiting constructions.

### **BACKGROUND**

Robin Dommissie and Tron Isaksen founded Austin Geomodeling, Inc. (“AGM”) in 1996. (Dkt. No. 1 at ¶ 13.) AGM provided reservoir modeling and consulting services for oil and gas companies from 1996 to 2002. (*Id.*) This work led them to develop their own geological interpretation and modeling software called RECON, which they released in 2002. *Id.* at ¶ 14. Around February 24, 2004, AGM launched Version 2.3.5 of its RECON software. (Ex. C, RECON Webpages, p. 43.) At that time, AGM published various marketing materials promoting RECON, including webpages, newsletters, and a white paper titled “RECON Innovations and Advantages.” (Exs. C; D, Apr. 6, 2004 RECON Newsletter.) The RECON materials were directed toward those of skill in the art—contemporary geologists using computerized geological interpretation software. AGM advertised program features such as “well log correlation,” “dynamic cross sections,” “projection of wells into cross-sections,” “conformable mapping,” “fence diagrams,” “seismic opacity filtering,” and more. (*See id.*)

AGM filed the ’319 patent application *three and a half years later*, on August 1, 2007. The claims and specification covered—and were often taken directly from—the published RECON materials.<sup>4</sup> Dynamic 3D asserted the ’319 patent against Schlumberger and Halliburton on February 4, 2014, and against Paradigm, Emerson/Roxar, LMKR, and IHS on June 4, 2014.

---

<sup>4</sup> Significant portions of the ’319 application, including the text at 1:62-2:7, 7:55-8:59, 18:11-53, 18:61-19:26, 19:44-20:24 and most of Figures 1, 6, 12-14, 31, 48, 59, 62-63, 81, 83 and 86 were taken *verbatim* from public marketing materials available before the patent’s priority date.



On July 18, 2014, Defendant Halliburton filed three petitions for *Inter Partes* Review of all 93 claims of the '319 patent. Dynamic 3D responded on October 31, 2014. (Ex. B.) Halliburton's petitions stated that it was relying on the plain meaning of all terms; Dynamic 3D did not dispute any claim construction issue in its response.<sup>5</sup> (*Id.* at 6.) The PTAB instituted all three of Halliburton's IPRs on January 12, 2015, finding Halliburton demonstrated a reasonable likelihood of prevailing on the ground that the RECON website<sup>6</sup> (Ex. C) anticipates or renders obvious all 93 claims. (Ex. E, p. 24.) The PTAB based its institution decision on the claim terms' plain meaning and found it unnecessary to construe the claims. (*Id.* at 5.)

## ARGUMENT

### I. Law of Claim Construction

Claim construction begins with the claim language because the claims “define the invention to which the patentee is entitled the right to exclude.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc); *see also Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 835 (2015) (claims “define[] the scope of the patentee's rights”). There is a “heavy presumption” that claim terms carry their “ordinary and customary meaning.” *Azure Networks*, 771 F.3d at 1347. The ordinary and customary meaning is “the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Phillips*, 415 F.3d at 1312-13; *Cisco Sys., Inc. v. Innovative Wireless Solutions*, Nos. 1:13-CV-00492, 1:13-CV-00504, 2015 WL 128138, at \*11 (W.D. Tex. Jan. 8, 2015).

---

<sup>5</sup> U.S. Patent & Trademark Office, *Message From Administrative Patent Judges Sheridan Snedden And Jacqueline Bonilla: Deep Dive Into A Patent Owner Preliminary Response In An Inter Partes Review Proceeding Before The Patent Trial And Appeal Board*, [http://www.uspto.gov/blog/aia/entry/deep\\_dive\\_into\\_a\\_patent](http://www.uspto.gov/blog/aia/entry/deep_dive_into_a_patent) (Feb. 24, 2014) (Patent Owner's preliminary response should address why “Petitioner's Claim Construction is Improper”).

<sup>6</sup> Although the PTAB considered additional RECON newsletters, it determined that “those citations are not necessary to support this Institution Decision and Petitioner's showing under [anticipation or obviousness] involving the Recon Website.” (Ex. E, p. 21, n. 20.)

The claim language is read in light of the intrinsic evidence—the specification and prosecution history (all of the proceedings in the Patent Office, including IPR proceedings). *See Phillips*, 415 F.3d at 1313-17; *01 Communique Lab., Inc. v. LogMeIn, Inc.*, 687 F.3d 1292, 1298 (Fed. Cir. 2012). However, any departure from a claim’s ordinary meaning must be based on language that is “clear and unmistakable.” *Thorner*, 669 F.3d at 1366-68. Courts “depart from the plain and ordinary meaning of claim terms based on the specification [or prosecution history] in only two instances: lexicography and disavowal.” *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1371 (Fed. Cir. 2014). “The standards for finding lexicography and disavowal are exacting.” *Id.* For example, “[t]o act as its own lexicographer, a patentee must clearly set forth a definition of the disputed claim term other than its plain and ordinary meaning and must clearly express an intent to redefine the term.” *Id.* (quotation and citation omitted). And it is black letter law that courts “do not read limitations from the embodiments in the specification into the claims.” *Id.*; *Playtex Prods., Inc. v. Procter & Gamble Co.*, 400 F.3d 901, 906 (Fed. Cir. 2005) (“claims, not the specification embodiments, define the scope of protection”).

Courts may also consider “extrinsic evidence,” which “consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises.” *Phillips*, 415 F.3d at 1317 (quotation and citation omitted). Where claim terms are clear and supported within the specification, there is “no reason to resort to consideration of extrinsic evidence.” *Aristocrat Techs Austl. Pty Ltd. v. Int’l Game Tech.*, 709 F.3d 1348, 1358 (Fed. Cir. 2013). However, “when an inventor’s understanding of a claim term is expressed in the prior art, it can be evidence of how those skilled in the art would have understood that term at the time of the invention.” *ArcelorMittal Fr. v. AK Steel Corp.*, 700 F.3d 1314, 1322 (Fed. Cir. 2012); *TGIP, Inc. v. AT&T Corp.*, 512 F. Supp. 2d 696, 708 (E.D. Tex.

2007) (relying on “articles written by the inventor and announcements concerning his calling card systems” to “construe the terms as understood by one skilled in the art”).

## II. Constructions of the Asserted Claims

Dynamic 3D’s effort to import limitations into the claims invites legal error. *Amdocs (Isr.) Ltd. v. Openet Telecom, Inc.*, 761 F.3d 1329, 1341 (Fed. Cir. 2014) (adopting “plain meaning interpretation” where specification demonstrated ordinary artisan would find district court’s construction to be improperly limiting). Each of the eight disputed claim terms relate to specific steps for creating three-dimensional interpretations from two-dimensional geological data. The disputed claim terms are all widely-used terms that are commonly understood by those skilled in the art. No special construction is necessary and each should be given its plain and ordinary meaning. This conclusion is mandated by the controlling law, supported by the intrinsic record, including the PTAB’s recent IPR decision, and consistent with the extrinsic evidence.

### A. “performing well log correlation operations”

Claims	Dynamic 3D’s Proposed Construction	Defendants’ Proposed Construction
1, 49	performing steps for correlating data points between well log datasets	Plain and ordinary meaning – no construction necessary

The parties dispute the term “performing well log correlation operations.” Defendants propose plain meaning. Dynamic 3D proposes the term be construed as “performing steps for correlating data points between well log datasets.” Dynamic 3D’s proposal contradicts the plain claim language and is unsupported by the intrinsic record.

Claims 1 and 49 recite generally “a system/method for performing geological interpretation operations” using computer software. One of those “operations” is performing well log correlations, a function that was well known and understood in the field long before the ’319 patent. The specification itself establishes that “well log correlation” software is commonly

known in the relevant field. (*See, e.g.*, Ex. A, '319 Patent, 1:15-17 (“**Known well log correlation software tools** succeed in transferring the paper-based workflows to the computer workstation.”)<sup>7</sup>; *id.* at 1:46-47 (“Currently, geoscientists have to use separate applications for **well-log correlation.**”).) Nothing in the specification redefines “well log correlation” or otherwise overcomes the “heavy presumption” that this term’s plain meaning to one of skill in the art governs. *Azure Networks*, 771 F.3d at 1347; *Sinorgchem Co. v. ITC*, 511 F.3d 1132, 1145 (Fed. Cir. 2007) (“[P]atents are addressed to and intended to be read by others of skill in the pertinent art.”).

Nor does the prosecution history justify departing from the plain meaning. During prosecution of the '319 application, the inventors distinguished prior art as not “performing well log correlation operations.” (Ex. G, Dec. 14, 2010 Office Action Response, p. 4.) The inventors did not define the term; instead, they clarified the distinction between well log data and seismic data using a conventional description of well log data. (*See id.*) (“[W]ell log data is retrieved by lowering a well log recorder down a well hole. The well log recorder is then raised within the well hole and records a litany of data”). Similarly, the inventors’ description of “well log correlation” on webpages for RECON, the commercial embodiment of the claimed invention, matches their use of the term in the patent claims and specification. (Ex. C, ¶¶ 14, 40.) *ArcelorMittal Fr.*, 700 F.3d at 1322 (“[W]hen an inventor’s understanding of a claim term is expressed in the prior art, it can be evidence of how those skilled in the art would have understood that term at the time of the invention.”); *see also TGIP*, 512 F. Supp. 2d at 708 (relying on “articles written by the inventor and announcements concerning his calling card systems” to “construe the terms as understood by one skilled in the art”). The PTAB found no

---

<sup>7</sup> All emphasis in quotations has been added unless otherwise noted.

construction was necessary for “performing well log correlation operations” in light of this art. (Ex. E, pp. 5, 24.)

Dynamic 3D’s proposed construction rewrites language that is readily understood and supported by the intrinsic record. Dynamic 3D’s proffered phrases “correlating data points” and “well log datasets,” do not appear in the intrinsic record much less the claims. *Amgen Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1325 (Fed. Cir. 2003) (“The danger of improperly importing a limitation is even greater when the purported limitation is based upon a term not appearing in the claim.”). Nor do the phrases “data points” or “well log datasets” appear in Dynamic 3D’s cited extrinsic dictionary definitions of “well log” and “correlation.”

Like the PTAB, the Court should find no construction is necessary.

**B. “forming dynamic cross-sections”**

<b>Claims</b>	<b>Dynamic 3D’s Proposed Construction</b>	<b>Defendants’ Proposed Construction</b>
1 , 49	forming cross-sections of a predetermined geological region reflecting geophysical data and well log data which can be changed interactively by the user in one view and which update in real-time in all views in response to said change	Plain and ordinary meaning – no construction necessary

The parties dispute the term “forming dynamic cross-sections.” Defendants propose plain meaning. According to Dynamic 3D, the single word “dynamic” should be replaced with a 36-word phrase that imports extraneous limitations into the claim and adds nothing to clarify the claim language. Dynamic 3D’s proposal contradicts the plain claim language and is unsupported by the intrinsic record.

Claims 1 and 49 recite “forming dynamic cross-sections of a predetermined geological region for energy resources exploration and production.” Nothing in the specification overcomes the heavy presumption in favor of the plain and ordinary meaning. Indeed, the specification

discusses dynamic cross-sections just once: “All visualization is performed in real-time, allowing the user to ***dynamically drag cross-sections*** across the volume to interactively interpret the wells-logs in conjunction with the seismic.” (Ex. A, 19:49-53.) Informed by the specification and the simple words of this claim term, one of skill in the art would readily understand that both “dynamic” and “cross-sections” have their plain meaning. *See Cisco Sys., Inc. v. Innovative Wireless Solutions*, Nos. 1:13-CV-00492, 1:13-CV-00504, 2015 WL 128138, at \*11 (W.D. Tex. Jan. 8, 2015) (adopting plain meaning of terms).

The prosecution history likewise includes no clear and unmistakable departure from ordinary meaning. During prosecution of the ’319 application, the inventors distinguished prior art that was not “dynamic:”

Yost merely calculates a difference between two seismic traces. There is no discussion of updating the calculation, adjusting the calculation based on new assumptions, or even using a different calculation algorithm.

(Ex. G, p. 4.) The inventors’ explanation confirms that the meaning of “dynamic” is no different from its commonly understood meaning, and fails to resemble (in the slightest) Dynamic 3D’s lengthy proposed construction. In the IPR, the inventors’ own description of “forming dynamic cross-sections” in their RECON webpages considered by the PTAB is identical to their use in the claims and specification. (Ex. C, p. 81 (“All visualization is performed in real-time, allowing the user to ***dynamically drag cross-sections*** across the volume to interactively interpret the wells-logs in conjunction with the seismic.”), p. 34 (“You can make annotations and hyperlinks on ***dynamic cross sections***”).) *ArcelorMittal Fr.*, 700 F.3d at 1322. As the PTAB found, nothing redefines the term from its plain meaning.

Dynamic 3D’s proposed construction is contrary to the claim language because it makes other claim terms redundant in two ways. First, Dynamic 3D’s proposed limitation “update in real-time in all views” improperly makes superfluous dependent claim 4, which provides for

*“immediate updates in multi-dimensional correlation views.”* See *Marine Polymer Techs., Inc. v. HemCon, Inc.*, 672 F.3d 1350, 1368 (Fed. Cir. 2012) (“Where a particular construction of an independent claim would nullify claims that depend from it, the doctrine of claim differentiation creates a presumption that such a construction is improper.”). Second, Dynamic 3D’s proposed inclusion of the phrase “of a predetermined geological region” improperly renders superfluous other language in claims 1 and 49, which already provide for “forming dynamic cross-sections *of a predetermined geological region.*” (Ex. A, 21:15, 24:47-48). See *U.S. Surgical Corp.*, 103 F.3d at 1568 (“[Claim construction] is not an obligatory exercise in redundancy.”); *Aristocrat Techs.*, 709 F.3d at 1356–57 (rejecting appellants’ construction because it would render another limitation “superfluous”). The claim language, therefore, confirms that the ordinary meaning of “forming dynamic cross-sections”—not Dynamic 3D’s elaborate limiting construction—applies.

Finally, many of Dynamic 3D’s proposed limitations have nothing to do with how the word “dynamic” is used with the word “cross-section” in the intrinsic record. For example, nothing in the claims, specification or prosecution history support, much less justify, restricting “dynamic cross-sections” to ones (i) “reflecting geophysical data” or (ii) having “well log data which can be changed interactively.” See *Woodrow Woods & Marine Exhaust Sys., Inc. v. Deangelo Marine Exhaust, Inc.*, 692 F.3d 1272, 1283-85 (Fed. Cir. 2012) (rejecting constructions that “adopt limitations not defined in, or required by, the specification”). Dynamic 3D cites two general purpose dictionary definitions for the term “dynamic,” but neither definition supports importing the functional limitations added by Dynamic 3D’s **36-word** construction.

The Court should reject Dynamic 3D’s proposed construction, which asks the Court to import a series of limitations, when the importation of any single limitation would be legal error.

**C. “presenting manipulable three-dimensional geological interpretations of two-dimensional geological data”**

<b>Claims</b>	<b>Dynamic 3D’s Proposed Construction</b>	<b>Defendants’ Proposed Construction</b>
1, 49	presenting three-dimensional geological interpretations of two-dimensional geological data that permit changes to be made in real time to the interpretation in an interactive three-dimensional environment	Plain and ordinary meaning – no construction necessary

Claims 1 and 49 recite the step of “presenting manipulable three-dimensional geological interpretations of two-dimensional geological data.” Defendants propose plain meaning. Dynamic 3D asks the Court to substitute the commonly used word “manipulable” with a 17-word phrase: “that permit changes to be made in real time to the interpretation in an interactive three-dimensional environment.” Importation of these limitations is inconsistent with the claims and specification.

The claim language “presenting manipulable three-dimensional geological interpretations of two-dimensional geological data” does not require “real time” changes or an “interactive” three-dimensional environment. Instead, the word “manipulable” is a commonly understood term used regularly in the specification consistent with its plain meaning. For example:

FIGS. 50 and 51 show how the *manipulating net-to-gross maps* may occur based on well log cutoffs or calculated log curves for the predetermined geological region in association with *manipulation of the present geological interpretation system*.

(Ex. A, 4:58-62.) “Manipulation” can be performed on net-to-gross maps or on the “present geological interpretation system,” as used in claims 1 and 49. The specification’s use of “manipulable” in a variety of contexts confirms the inventors used the term in the claims consistent with its plain meaning. No special definitions or disavowals exist in the specification. In *Cisco Systems v. Innovative Wireless Solutions*, the Court similarly construed the term



“interface” and found it was “used generally, with no specific indication that the patentee intended a definition different than the plain and ordinary meaning of interface.” 2015 WL 128138, at \*5. The term, the Court explained, is “regularly understood” and “used in a wide variety of contexts within the patent.” *Id.* So too here.

Likewise, nothing in the prosecution history limits the plain meaning of “manipulable” or the longer disputed phrase in which “manipulable” appears. In prosecution of the ’319 application, the inventors distinguished prior art based on this term:

Yost merely calculates a difference between two seismic traces for a series of traces contained in three-dimensional data. Yost has no discussion of two-dimensional data nor of presenting any data in a *manipulable* format. Additionally, there is no discussion in Yost about presenting *manipulable three-dimensional geological interpretations of two-dimensional geological data*.

(Ex. G, p. 4.) The inventors used the word “manipulable” in different contexts and consistent with its plain meaning. *See Cisco Sys.*, 2015 WL 128138 at \*5. Last, use of “manipulation” in the RECON webpages cited in the IPR confirms its plain meaning use in the claims. (Ex. C, p. 33 (“Fast *manipulation* of well logs and seismic in 2-D and 3-D”).) *ArcelorMittal Fr.*, 700 F.3d at 1322.

In contrast, Dynamic 3D’s heavy reliance on general and technical dictionary definitions is precisely the analysis held erroneous by the Federal Circuit. *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1377 (Fed. Cir. 2014) (“[W]e have cautioned against relying on dictionary definitions at the expense of a fair reading of the claims . . . .”). And the specific definitions Dynamic 3D espouses for the terms “interpretation,” “geological,” and “manipulable,” do not mention the “real time” or “interactive” limitations that Dynamic 3D seeks to import.

Dynamic 3D’s proposed construction is erroneous and should be rejected.

**D. “automatic reprojections of well trajectories into the cross-sections”**

<b>Claims</b>	<b>Dynamic 3D’s Proposed Construction</b>	<b>Defendants’ Proposed Construction</b>
3	automatically updating which wells are projected into the cross-section in response to changes in the cross-section	Plain and ordinary meaning – no construction necessary

Claim 3 requires the claimed system to carry out “automatic reprojections of well trajectories into the cross-sections.” Defendants propose plain meaning. Dynamic 3D proposes importing the limitation that this function be only “in response to changes in the cross section.”

The term “automatic reprojections of well trajectories into the cross-sections” has a plain and ordinary meaning that is consistent with its use in the specification. The claim language does not require reprojection of well trajectories to be in response to *any* changes, much less the specific one Dynamic 3D proposes. But even if it did, Dynamic 3D’s proposed limitation contradicts the ’319 disclosure, which expressly teaches automatic reprojections of well trajectories into the cross-sections resulting from changes made to the lines-of-section in the base map:

To bridge the spatial differences between these two dimensional representations and the three-dimensional world, the disclosed system allows the interpreter to change *lines-of-section in the base map* in real-time and to observe the *immediate re-projection of these wells in the two dimensional cross-section view*.

(Ex. A, 19:14-19.) Excluding this embodiment from the claim term would be legal error. *GE Lighting Solutions, LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1311 (Fed. Cir. 2014) (“[W]here claims can reasonably [be] interpreted to include a specific embodiment, it is incorrect to construe the claims to exclude that embodiment, absent probative evidence on the contrary.” (quotation and citation omitted)); *Amdocs (Isr.)*, 761 F.3d at 1341 (adopting plain meaning and reversing construction that excluded embodiment disclosed in specification). Moreover, the specification never discloses any “changes in the cross-section” leading to reprojection of wells.

*See Woodrow Woods*, 692 F.3d at 1283-85 (rejecting constructions that “adopt limitations not defined in, or required by the specification”).

Although the meaning of the term “automatic reprojections of well trajectories into the cross-sections” was not addressed during prosecution of the ’319 application, the PTAB considered RECON materials describing it in an identical fashion to the inventors’ use in the specification and claims and found no construction necessary. (Ex. C, p. 14 (“When you change a line-of-section, RECON will [] automatically reproject all associated wells into the cross-section.”).) *See ArcelorMittal Fr.*, 700 F.3d at 1322.

The Court should adopt the term’s plain meaning, requiring no construction, and reject Dynamic 3D’s attempt to import yet another unsupported limitation into the claim language.

**E. “stratigraphic erosional rules”**

Claims	Dynamic 3D’s Proposed Construction	Defendants’ Proposed Construction
11, 56	rules for execution of stratigraphic relationships	Plain and ordinary meaning – no construction necessary

Claims 11 and 56 require the claimed system and method integrate “stratigraphic erosion rules into said manipulable three-dimensional geological interpretations.” Although this term is not used by most people in everyday life, it is commonly used and readily understood by those of skill in the art. While the jury may benefit from understanding the definition of the term “stratigraphic” to those of skill in the art, Dynamic 3D’s proposed construction provides no additional clarity while seeking to read out altogether the express claim limitation “erosional.”

The term “stratigraphic erosional rules” is used verbatim in the ’319 specification and informed through figures. (Ex. A, 14:60-62 (“FIGS. 16 through 19 exhibit integrating *stratigraphic erosional rules* into the present geological interpretation system.”).) The Court will not find Dynamic 3D’s proposed “stratigraphic relationships” anywhere in the specification.

There is nothing in the claims or the specification demonstrating the inventors' intent to deviate from the term's plain meaning.

The prosecution history likewise does not deviate from the plain meaning. In its IPR petition for this claim element, Halliburton cited a Petrel 2005<sup>8</sup> prior art reference that describes implementing "erosional rules" to define stratigraphic layers. (Ex. B, p. 37.) As the petition explained, layer thickness may be defined by the level of erosion. (*Id.*) Halliburton further cited equivalent RECON features for controlling and defining stratigraphic layers based on "the depositional environment (e.g., erosion)." (*Id.*; see also Ex. C, p. 86.) The PTAB recognized that both uses are consistent with the plain meaning of the term to one of ordinary skill in the art. *ArcelorMittal Fr.*, 700 F.3d at 1322.

Dynamic 3D's proposed construction omits the essential limitation "erosional" from the term, and redefines the term to more generally encompass "stratigraphic" rules. *SanDisk Corp. v. Kingston Tech. Co.*, 695 F.3d 1348, 1368 (Fed. Cir. 2012) (rejecting construction that "improperly ignores express limitations of the claims"); *K-2 Corp. v. Salomon S.A.*, 191 F.3d 1356, 1364 (Fed. Cir. 1999) ("Courts do not rewrite claims; instead, we give effect to the terms chosen by the patentee."). To support this rewriting of the claim, Dynamic 3D cites four dictionary definitions, one for "erosional" and three for "stratigraphic," but these definitions only confirm that the meaning of "erosional" cannot be replaced by the meaning of "stratigraphic."<sup>9</sup>

---

<sup>8</sup> Petrel 2005 is a geological interpretation software developed by Schlumberger. See, e.g., Ex. A, 8:49, 12:25.

<sup>9</sup> **erosion**: "The process of denudation of rocks, including physical, chemical and biological breakdown and transportation." *Erosion Definition*, Schlumberger Oilfield Glossary, <http://glossary.oilfield.slb.com/en/Terms/e/erosion.aspx> (last visited Jan. 29, 2015).

**stratigraphy**: "The study of the history, composition, relative ages and distribution of strata, and the interpretation of strata to elucidate Earth history." *Stratigraphy Definition*, Schlumberger Oilfield Glossary, <http://glossary.oilfield.slb.com/en/Terms/s/stratigraphy.aspx> (last visited Jan. 29, 2015). See also stratum: "A layer of sedimentary rock. The plural form is

Dynamic 3D's proposed construction eliminates the word "erosional," rewrites the claim term in a way that is inconsistent with the intrinsic record and extrinsic evidence, and fails to clarify the term's plain meaning. No construction is necessary. At most, the Court should adopt the dictionary definition of the term "stratigraphic" alone, to the extent the Court believes that definition makes the term more accessible to a lay jury.

**F. "conformable mapping operations"**

Claims	Dynamic 3D's Proposed Construction	Defendants' Proposed Construction
31, 34, 78, 81	creation of a map having conformance relationships	Plain and ordinary meaning – no construction necessary

Claims 31 and 78 require that the claimed system and method perform "one-step conformable mapping operations for the predetermined geological region," while claims 34 and 81 require "performing recursive conformable mapping operations between multiple horizons of said predetermined geological region." The parties dispute whether the term "conformable mapping operations" requires construction. Defendants propose plain meaning. Dynamic 3D would redefine the term as "creation of a map having conformance relationships."

The principal dispute between the parties is whether the term "conformable mapping operations" should be limited to the operation or "creation" of a map. The claim language is "conformable mapping *operations*," which has a plain meaning to a person of ordinary skill, and merely describes steps for conforming map horizons, or surfaces. The term is used in the specification consistently with the claim language and is applied to figures. (Ex. A, 16:25-28 ("FIGS. 58 and 59 exhibit functions of performing one-step *conformable mapping operations* for the predetermined geological region"); *see also id.* at 16:34-38 ("FIGS. 62 and 63 present

---

strata." *Stratum Definition*, <http://glossary.oilfield.slb.com/en/Terms/s/stratum.aspx> (last visited Jan. 30, 2015).

how the present system executes a set of instructions for performing recursive ***conformable mapping operations*** between multiple horizons of the predetermined geological region”).) Notably, neither the cited figures—nor anything else in the specification—describes the creation of maps or otherwise supports limiting the broader term to the specific operation of creating a map set forth in Dynamic 3D’s proposed construction. (*Id.* at Figs. 58, 59, 62, 63.)

The meaning of “conformable mapping operations” was not addressed during prosecution of the ’319 application. But the inventors’ description of conformable mapping operations in their RECON webpages cited in the IPR is identical to their use in the specification and claims, and provides no basis to redefine the term. (Ex. C, pp. 10, 21, 22 33, 34, 44, 77 (describing one-step conformable mapping and recursive conformable mapping).) *See ArcelorMittal Fr.*, 700 F.3d at 1322. Instead, that usage confirms that there are conformable mapping operations other than creating a map, for example gridding techniques. (*See, e.g.*, Ex. C, pp. 21, 22.)

Dynamic 3D’s extrinsic evidence does not support its construction. Dynamic 3D cites a 1986 article describing how conformable surface generation is performed by a computer:

1. ***Identify*** the control surface in a sequence [] and ***grid*** it; 2. ***Calculate*** the thickness between the control surface and the adjacent conformable surface at the wells penetrating both surfaces; 3. ***Build*** an isochore grid using these thickness values; 4. ***Subtract or add*** [] the isochore grid from the control grid.

(Ex. H, “Contouring Geologic Surfaces with the Computer” (1986), pp. 101-102.) Dynamic 3D’s extraneous limitation of “creation of a map” is inconsistent with these operations. The article goes on to say that conformable surface generation by computer “is essentially the same as done by hand.” (*Id.* at p. 101.) *Cf.* 35 U.S.C. § 101. This demonstrates that the term “conformable mapping operations” was long known to one of skill in the art and has a readily understood plain meaning that should be adopted. *Starhome GmbH v. AT&T Mobility LLC*, 743 F.3d 849, 856-57 (Fed. Cir. 2014) (using technical dictionaries as evidence that a claim term

“had a well-understood meaning in the art” consistent with its use in the claims and specification). The term needs no construction.

**G. “forming fence diagrams of seismic backdrop cross-sections”**

<b>Claims</b>	<b>Dynamic 3D’s Proposed Construction</b>	<b>Defendants’ Proposed Construction</b>
41, 87	forming a graphical display of three-dimensional data and interpretations in a two-dimensional perspective view of seismic backdrop cross-sections	Plain and ordinary meaning – no construction necessary

Claims 41 and 87 require that the claimed system and method perform the function of “forming fence diagrams of seismic backdrop cross-sections.” Defendants propose plain meaning. Dynamic 3D proposes substituting the well-understood term “fence diagram” with the 13-word phrase: “a graphical display of three-dimensional data and interpretations in a two-dimensional perspective view.” Dynamic 3D’s proposed construction is unsupported.

The claims only require forming a “fence diagram” of seismic backdrop cross-sections and do not limit the type of fence diagram. The term’s plain meaning is confirmed by its usage in the specification. (Ex. A, 16:54-57 (“FIG. 72 display views of forming three-dimensional visualizations of *seismic fence diagrams* of the predetermined geological region from the present system.”).) Nothing in the specification supports adding in the words “graphical display,” “three-dimensional data,” or “two-dimensional perspective view” to the term, or otherwise redefining it. The prosecution history also does not stray from the phrase’s plain meaning. And although the term’s meaning was not addressed during prosecution of the ’319 application, the PTAB considered RECON materials describing fence diagrams in an identical fashion to the inventors’ use in the specification and claims, (Ex. D, p. 2), and found no construction necessary. *ArcelorMittal Fr.*, 700 F.3d at 1322.

Dynamic 3D's proposed construction is based on a dictionary definition for "fence diagram" taken from a Schlumberger website. But it is unnecessary to consult a dictionary or the Internet where the claim terms are readily understood and supported by the specification. *Aristocrat Techs.*, 709 F.3d at 1358. Dynamic 3D's proposed dictionary definition imports limitations such as "graphical display," "three-dimensional data," and "two-dimensional perspective view," which are absent from the specification, and thus improperly alter the meaning of the claims. *See Nystrom v. TREX Co.*, 424 F.3d 1136, 1142-43 (Fed. Cir. 2005) ("[U]ndue reliance on extrinsic evidence poses the risk that it will be used to change the meaning of claims in derogation of the indisputable public records consisting of the claims, the specification and the prosecution history ... ." (quotation and citation omitted)).

Dynamic 3D's proposed construction improperly seeks to rewrite the claims to avoid prior art and should be rejected. The Court should adopt the term's plain meaning.

#### **H. "seismic opacity filtering"**

<b>Claims</b>	<b>Dynamic 3D's Proposed Construction</b>	<b>Defendants' Proposed Construction</b>
42, 88	filtering, or adjusting the visibility, of certain seismic data	Plain and ordinary meaning – no construction necessary

Claims 42 and 88 requires the step of "seismic opacity filtering." Defendants propose plain meaning. Dynamic 3D proposes rewriting a term that has a plain meaning by substituting a lengthy and ambiguous phrase.

The claims call for "performing interactive seismic opacity filtering for a plurality of views of said predetermined geological region." The specification uses the plain term "seismic opacity filtering," shown in figures, to describe the system. (Ex. A, 16:57-59 ("FIG. 73 shows performing interactive seismic opacity filtering."), 19:58-60.) "Seismic opacity filtering" has plain meaning to a person of ordinary skill, and the specification does not redefine or disavow its



plain meaning. (*Id.*) The prosecution history comports with the plain meaning of the term because the inventors did not alter the meaning of “seismic opacity filtering” during prosecution of the ’319 application. And the inventors’ description of “seismic opacity filtering” in RECON materials considered by the PTAB in the recent IPR is identical to the inventors’ use in the specification and claims, and provides no basis to redefine or clarify the term, as the PTAB found. (Ex. C, pp. 11, 33, 57, 81.) *See ArcelorMittal Fr.*, 700 F.3d at 1322.

Dynamic 3D’s term “adjusting the visibility,” is not found in the specification or extrinsic evidence. Dynamic 3D cites dictionary definitions for “seismic,” “filter,” and “seismic interpretation,” but none of these definitions warrants interpreting “seismic opacity filtering” to mean “adjusting the visibility.” Dynamic 3D cites a geological publication, but that document confirms that the term “opacity” is readily understood to those of skill in the art.<sup>10</sup> Regardless, Dynamic 3D’s definition is loosely worded and introduces ambiguity by creating a question of whether the claim term would be met through *either* “filtering” *or* “adjusting the visibility” of certain seismic data. Dynamic 3D’s proposed construction is improper and should be rejected.

### CONCLUSION

Defendants respectfully request that the Court adopt the plain meaning for each of the eight disputed claim terms and find that no construction is necessary, and grant any other relief the Court deems just.

Dated: February 12, 2015

---

<sup>10</sup> Dynamic 3D cites the geologist publication *First Break*, which states: “The technique is to display a small number, say 10, of vertical sections with *opacity* of say 50%. This allows the interpreter to see through the entire slab.” (Ex. I, “Visualizing 3D Features in 3D Seismic Data” (Mar. 2009), p. 57.) No explanation of the term was required, as one of ordinary skill understood it.

Respectfully submitted,

/s/ Steven J. Wingard

Stephen E. McConnico, State Bar No. 13450300  
Steven J. Wingard, State Bar No. 00788694  
Paige Arnette Amstutz, State Bar No. 00796136  
SCOTT, DOUGLASS & MCCONNICO, L.L.P.  
600 Congress Avenue, Suite 1500  
Austin, TX 78701  
Tel.: (512) 495-6300  
Fax: (512) 474-0731  
smconnico@scottdoug.com  
swingard@scottdoug.com  
pamstutz@scottdoug.com

Maximilian A. Grant (pro hac vice)  
LATHAM & WATKINS LLP  
555 Eleventh Street N.W., Suite 1000  
Washington, DC 20004-1304  
Tel.: (202) 637-2200  
Fax: (202) 637-2201  
max.grant@lw.com

Ann Marie Wahls (pro hac vice)  
LATHAM & WATKINS LLP  
330 North Wabash Avenue, Suite 2800  
Chicago, IL 60611  
Tel.: (312) 876-7700  
Fax: (312) 993-9767  
annmarie.wahls@lw.com

ATTORNEYS FOR DEFENDANTS  
SCHLUMBERGER LIMITED  
(SCHLUMBERGER N.V.),  
SCHLUMBERGER HOLDINGS CORPORATION  
AND SCHLUMBERGER TECHNOLOGY  
CORPORATION

/s/ Scott W. Hejny

Ted Stevenson III  
Texas State Bar No. 19196650  
tstevenson@mckoolsmith.com  
Scott W. Hejny  
Texas State Bar No. 24038952  
shejny@mckoolsmith.com  
Aimee Perilloux Fagan

Texas State Bar No. 24010299  
afagan@McKoolSmith.com  
MCKOOL SMITH, P.C.  
300 Crescent Court Suite 1500  
Dallas, TX 75201  
Telephone: (214) 978-4000  
Telecopier: (214) 978-4044

Kathy H. Li  
Texas State Bar No. 24070142  
kli@McKoolSmith.com  
Kevin P. Hess  
Texas State Bar No. 24087717  
khess@McKoolSmith.com  
Kristina S. Baehr  
Texas State Bar No. 24080780  
kbaehr@McKoolSmith.com  
MCKOOL SMITH, P.C.  
300 W. 6th Street, Suite 1700  
Austin, TX 78701  
Telephone: (512) 692-8700  
Telecopier: (512) 692-8744

ATTORNEYS FOR DEFENDANTS  
HALLIBURTON COMPANY;  
HALLIBURTON ENERGY SERVICES, INC;  
LANDMARK EXPLORATION AND  
PRODUCTION SOFTWARE AND SERVICE,  
INC.; LANDMARK GRAPHICS CORPORATION;  
LMKR HOLDINGS; AND LMK RESOURCES,  
INC.

/s/ Kadie M. Jelenchick  
Ethan L. Shaw  
State Bar No. 18140480  
elshaw@shawcowart.com  
Shaw Cowart LLP  
Austin, Texas 78701  
(512) 499-8900 (t)  
(512) 320-8906 (f)

Linda E.B. Hansen, admitted pro hac vice  
lhansen@foley.com  
Kadie M. Jelenchick, admitted pro hac vice  
kjelenchick@foley.com  
Foley & Lardner LLP

777 East Wisconsin Avenue  
Milwaukee, Wisconsin 53202  
(414) 271-2400 (t)  
(414) 297-4900 (f)

Adrienne Hunacek Miller, admitted pro hac vice  
amiller@foley.com  
Foley & Lardner LLP  
975 Page Mill Road  
Palo Alto, California 94304  
(650) 856-3700 (t)  
(650) 856-3710 (f)

ATTORNEYS FOR DEFENDANTS EMERSON  
ELECTRIC CO., EMERSON PROCESS  
MANAGEMENT LLLP, ROXAR, INC., AND  
ROXAR AS

By: /s/ Michael Chibib  
Michael Chibib  
State Bar No. 00793497  
Matthew K. Gates  
State Bar No. 24069770  
Pillsbury Winthrop Shaw Pittman LLP  
221 West 6th Street, Suite 1110

Austin, Texas 78701  
Telephone: (512) 375-4909  
Facsimile: (512) 270-7845  
Michael.Chibib@pillsburylaw.com  
Matt.gates@pillsburylaw.com

ATTORNEYS FOR DEFENDANTS  
PARADIGM, B.V., PARADIGM  
GEOPHYSICAL, B.V., PARADIGM  
GEOPHYSICAL CORP., PARADIGM LTD.  
AND PARADIGM SERVICES CORP.

/s/ Charles J. Monterio, Jr.  
David P. Whittlesey  
dwhittlesey@andrewskurth.com  
State Bar No. 00791920  
111 Congress Avenue, Suite 1700  
Austin, Texas 78701  
Telephone: (512) 320-9200  
Facsimile: (512) 320-9292

Jeffrey K. Sherwood  
SherwoodJ@dicksteinshapiro.com  
State Bar No. 24009354  
Charles J. Monterio, Jr. (Pro Hac Vice)  
MonterioC@dicksteinshapiro.com  
DICKSTEIN SHAPIRO LLP  
1825 Eye Street NW  
Washington, DC 20006-5403  
Tel: (202) 420-2200  
Fax: (202) 420-2201

ATTORNEYS FOR DEFENDANTS  
IHS INC. AND IHS GLOBAL INC.

**CERTIFICATE OF SERVICE**

I hereby certify that, on February 12, 2015 a true and correct copy of the foregoing was filed with the United States District Court for the Western District of Texas through its Case Management/Electronic Case Files system and thereby served the following attorneys of record:

Michael J. Collins  
John J. Edmonds  
Henry Pogorzelski  
Shea N. Palavan  
Matthew C. Juren  
COLLINS, EDMONDS & POGORZELSKI,  
SCHLATHER & TOWER, PLLC  
1616 S. Voss Road, Suite 125  
Houston, Texas 77057

/s/ Steven J. Wingard  
Steven J. Wingard